

**Notice of Allowability**

Application No.

10/638,174

Examiner

James D. Stein

Applicant(s)

SCHROEDER, DALE W.

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 1/13/06.
2. ☒ The allowed claim(s) is/are 1,3,4,7-12 and 16-19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
John D. Lee  
Primary Examiner

  
James D. Stein  
Patent Examiner, AU 2874

### **DETAILED ACTION**

This Office Action is responsive to the amendment filed on 01/13/06, which has been fully considered and entered.

#### ***Response to Arguments***

Applicant's arguments in view of the amendments to independent claims 1, 7 and 16 are persuasive.

#### ***Allowable Subject Matter***

Claim 1, 3, 4, 7-12 and 16-19 are allowed.

The following is an examiner's statement of reasons for allowance: None of the cited prior art discloses or suggests the optical switch previously claimed, wherein the input and output fibers are included in a single bundle of fibers. Vaganov teaches an optical switch comprising actuators that bend optical fibers in order to direct light from input fibers to output fibers. Fig. 1B of Laor shows an optical switch wherein the input fibers and output fibers are located on the same side of the device and mirror which reflects light emitted by the input fibers to the output fibers. However, based on the teachings of Vaganov and Laor, it would not have been obvious at the time of the invention to an ordinarily skilled artisan to include the input fibers and output fibers in a single bundle, as claimed by applicant (fig. 4). Laor uses a mirror to direct light from any of the input fibers to any of the output fibers, which are included on the same side of the device in order to reduce the depth of the device. Laor does not include bending of the fibers to direct light. Therefore, it is not apparent that including the input fibers and the output fibers in a single bundle would permit light to enter the output fibers after being reflected by the mirror, since such a modification would change the angle of incidence of the light.

Furthermore, one of ordinary skill in the art would not have been motivated to modify the prior art to achieve the claimed invention, as there is no suggestion that such a modification would be advantageous in any way. The present invention allows multiple channels to be simultaneously switched by using actuators to bend the ends of optical fibers in order to direct light from input fibers to output fibers. By including the input fibers and output fibers in a single bundle, applicant has provided a faster, more integral and dynamic optical switch than the prior art. For these reasons the claimed invention is patentably distinct from the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

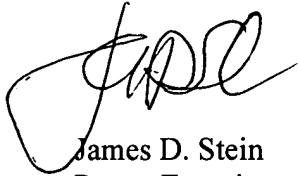
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

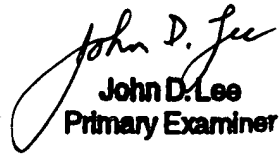
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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